

THE HELIX MODEL SYSTEM AS A CHALLENGE AND DRIVER FOR RURAL AND REGIONAL DEVELOPMENT

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The purpose

- ▶ of this research study is to examine theoretical findings and, based on them, to identify the problems for implementing the Quintuple Helix Model approach for rural and regional development in Latvia.

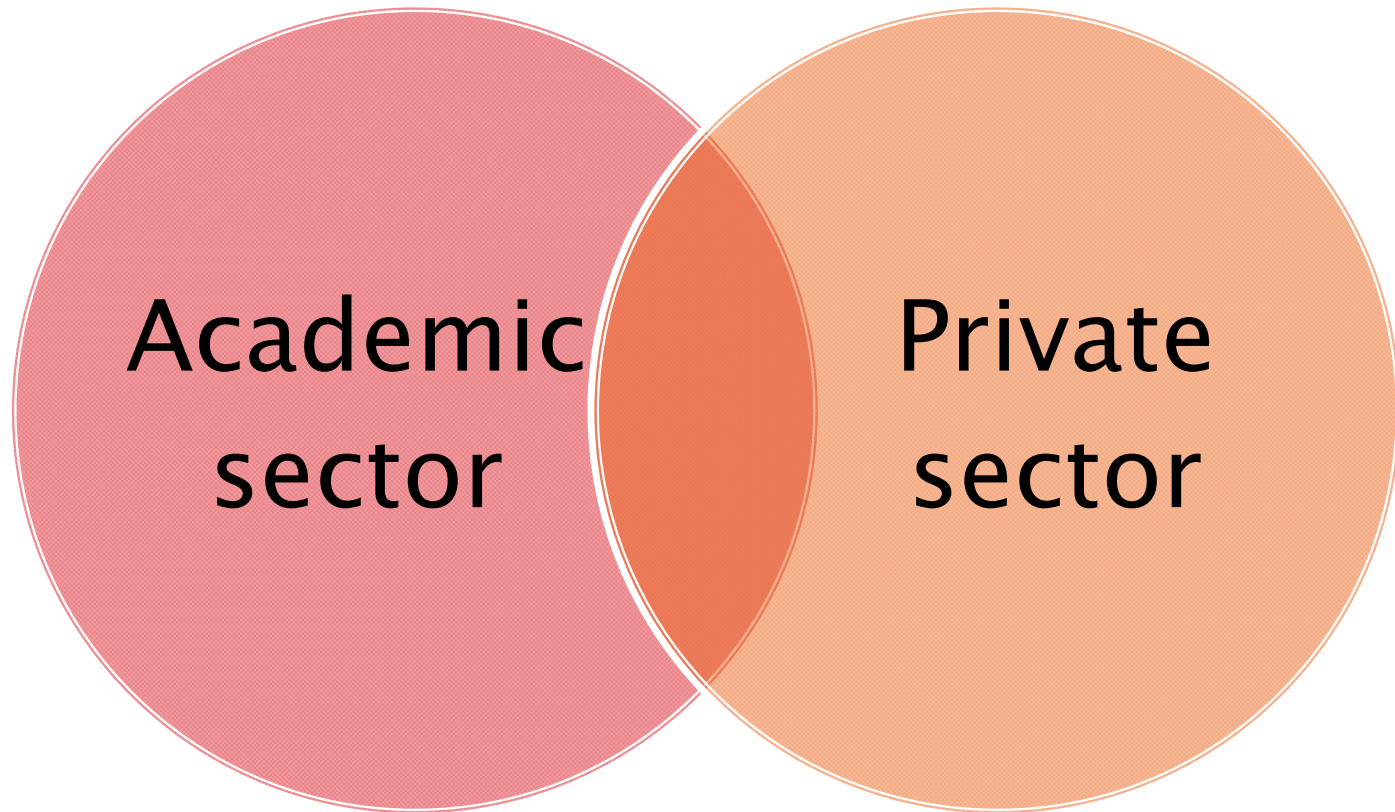
Research methodology and participants

1. The theoretical part of the paper is to examine the evolution of the Helix Model system
2. The second part of the paper describes the experience of implementing the Quintuple Helix Model approach for smart rural development in Latvia.
 - ▶ To get a deeper insight into the problem, a survey was undertaken by the authors in 2015 with 123 Rural Community representatives with authorities in all 110 Latvia's local municipalities. Replies were received from 76 local governments, The survey was analysed and the data processed by the authors of the paper within the present research.
 - ▶ In Latvia there are six regional universities. Only one of them, Latvia University of Agriculture (LUA), is directly connected with preparing qualified specialists for different rural industries.
 - ▶ Therefore the experience of Latvia University of Agriculture in using the Quintuple Helix Model approach for rural and regional development in Latvia is analysed in this research.

1. The evolution of the Helix Model system

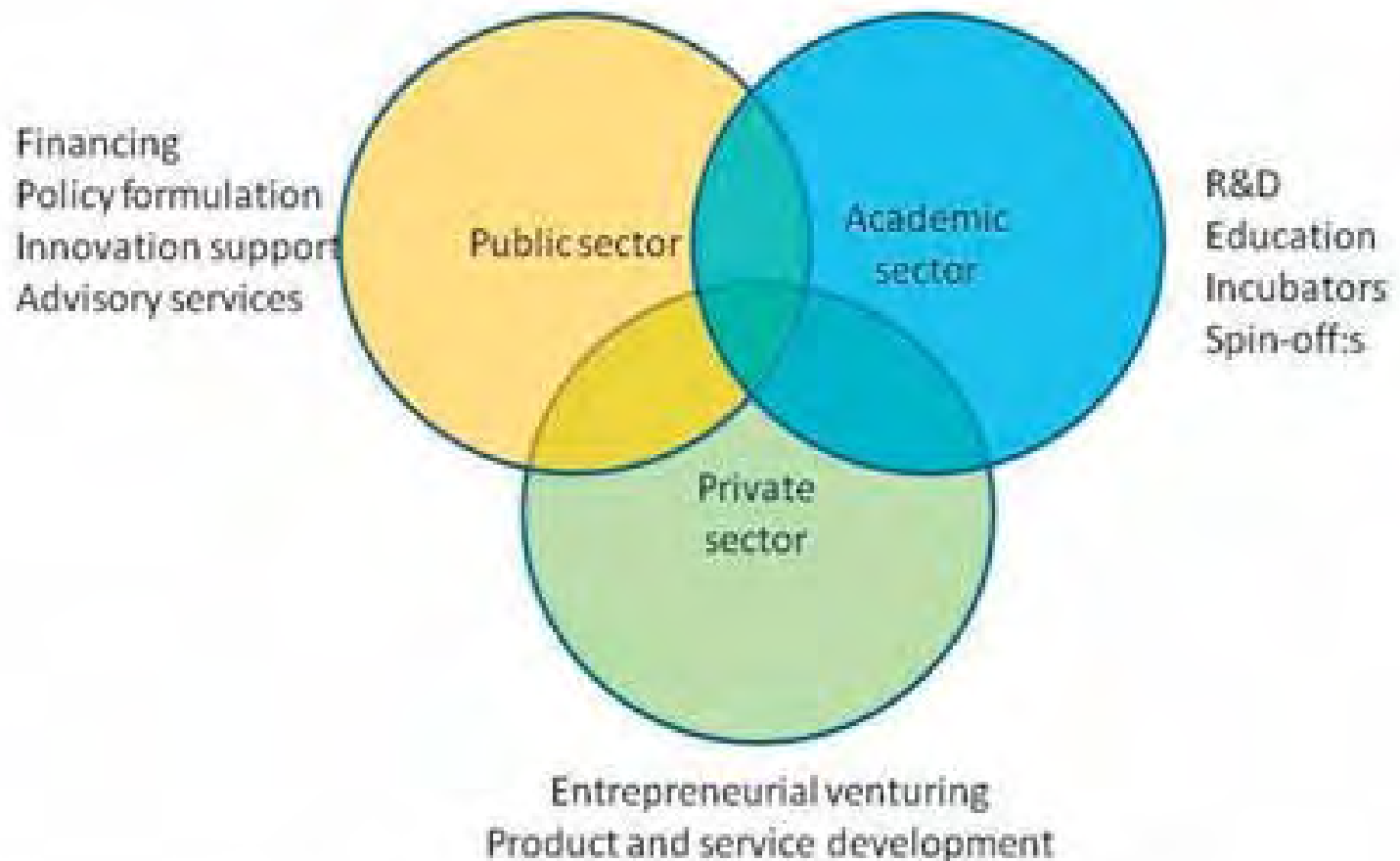
- ▶ The Quintuple Helix model is more comprehensive, implying co-operation among five basic elements: university, industry, government, media and culture-based public and civil society, as well as the natural environments of society.
- ▶ Therefore the Quintuple Helix stresses the necessary socio-ecological transition of society and economy in the twenty-first century.

Double Helix model

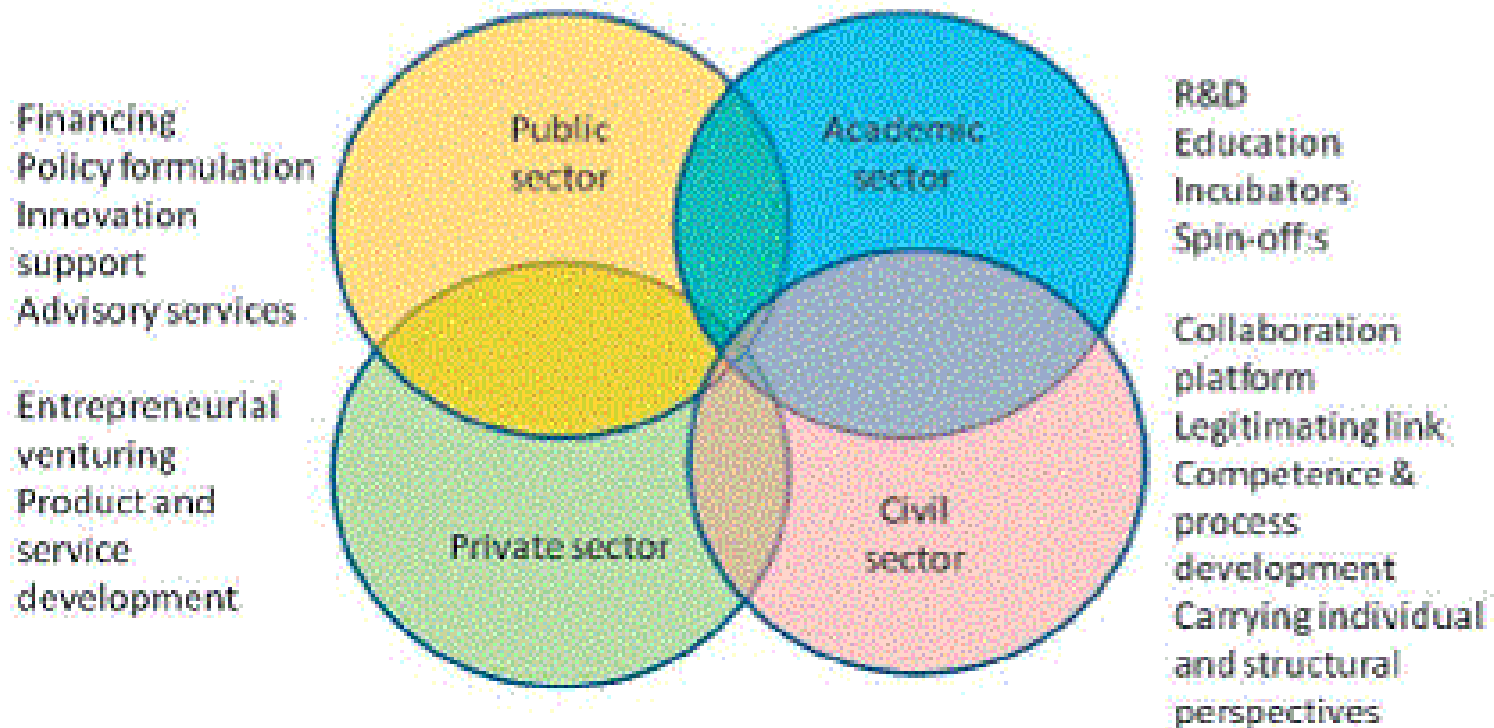


Designed by Etzkowitz and Leydesdorff
(2000)

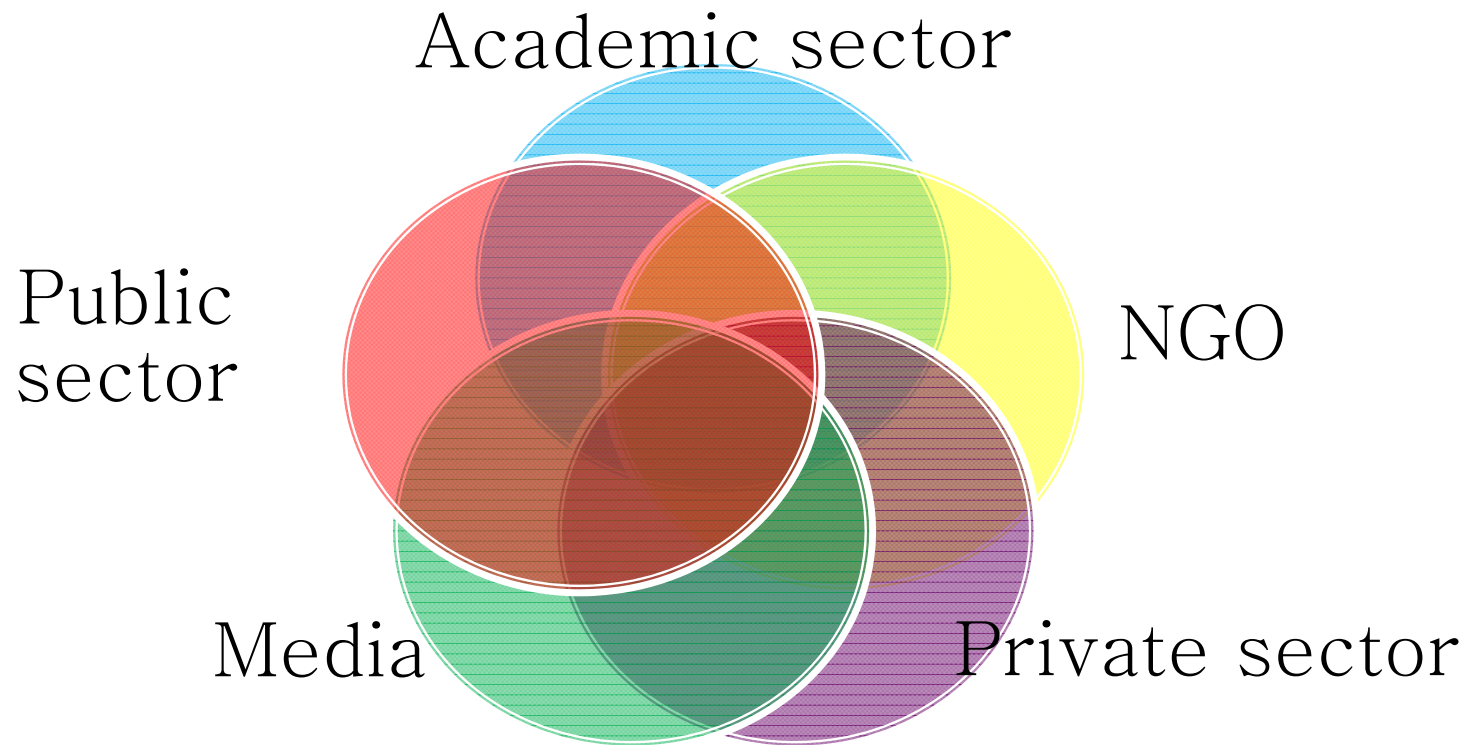
Triple Helix model



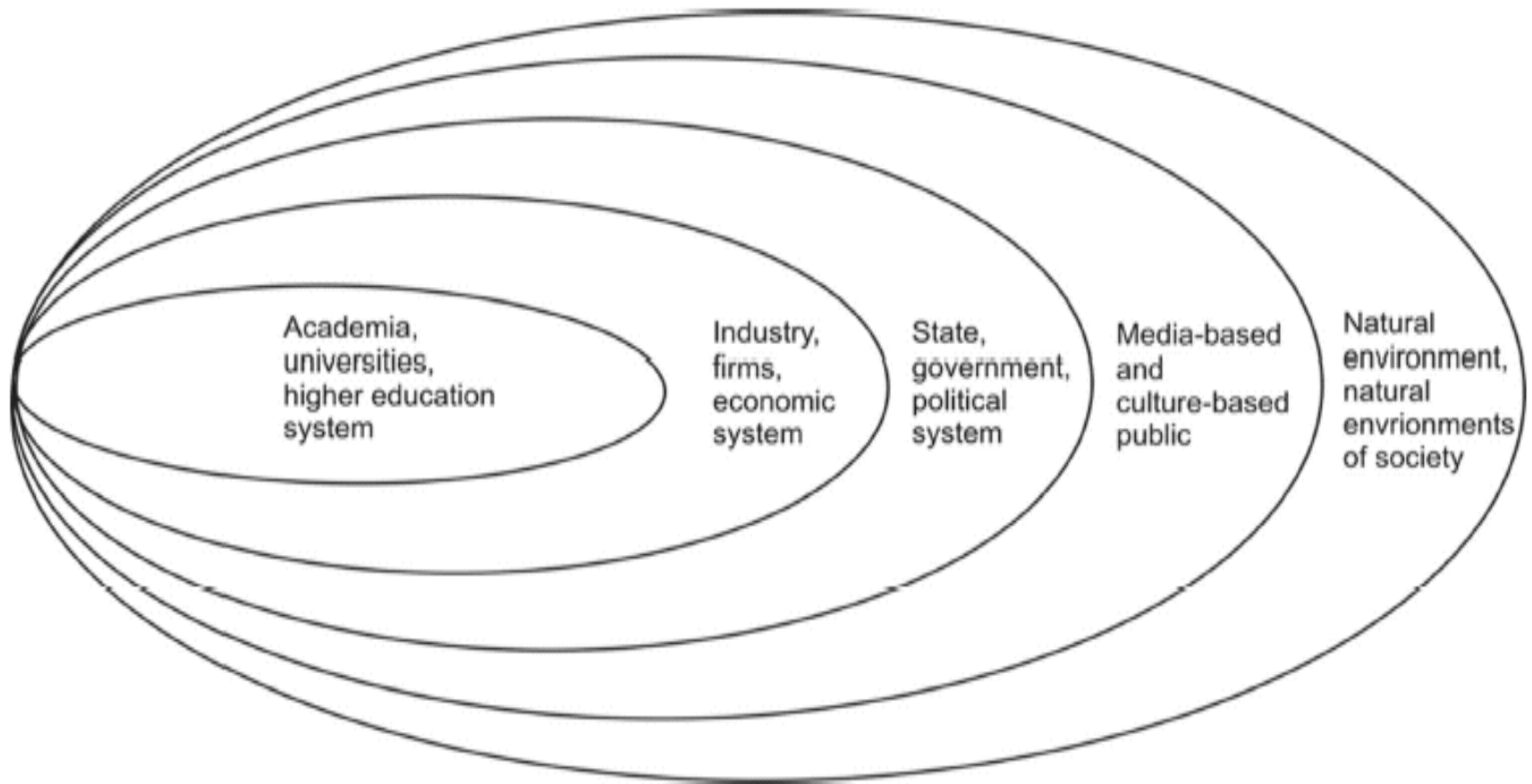
Quadruple Helix model



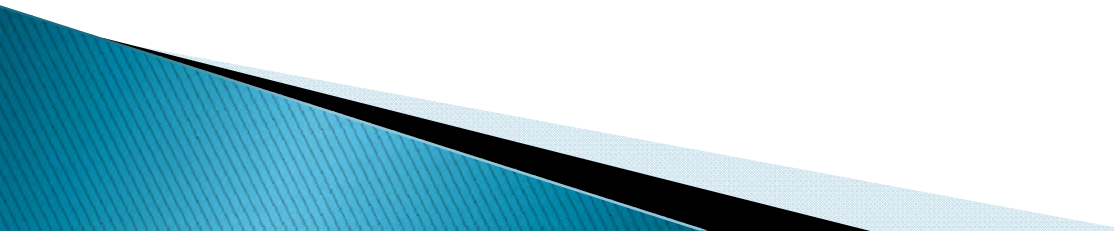
Quintuple Helix model




The subsystems of the Quintuple Helix model. (Carayannis et al., 2012)



Definition

- ▶ “The Quintuple Helix Model is interdisciplinary and transdisciplinary at the same time: the complexity of the five-helix structure implies that a full analytical understanding of all helices requires the continuous involvement of the whole disciplinary spectrum, ranging from the natural sciences (because of the natural environment) to the social sciences and humanities (because of society, democracy and the economy).” (Carayannis, Campbell, 2010, p. 62)
 - ▶ **The Quintuple Helix model approach could be used as an instrument for government at national and regional/community level to promote innovation, entrepreneurship and facilitate rural and regional development.**
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2. The experience of a regional university in using the Quintuple Helix Model approach for smart rural development in Latvia

- ▶ **Universities are one of the most important Helix model system elements and they become an important source of regional economic development.**
 - ▶ **The key tasks of higher education is to provide a study process according to the market requirements and to create new knowledge and technology, and transfer it to the national economy to foster the development of society.**
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- ▶ It requires changing the study process towards **entrepreneurial education**, focused on building entrepreneurial competences and involving students in the new training modules such as
 - university-based business incubator activities,
 - science parks,
 - academic spin-offs,
 - inter-disciplinary centres,
 - venture capital firms and firm-formation projects, etc.It is consequently achieved that students can be trained and encouraged to become entrepreneurs and firm founders.

For implementing the Quintuple Helix Model approach at Latvia University of Agriculture, the **Centre of Technology and Knowledge Transfer (TEPEK)** was established in November of 2005.

Technology and Knowledge Transfer Office (TEPEK)



Structural unit of the Latvia University of Agriculture. The goal of TEPEK – promote the cooperation of researchers and businesses; the protection of the intellectual property and commercialization of the research results of the Latvia University of Agriculture; explore the existing research competence and develop the necessary research competence at the university.

Main activities:

- ▶ consultation of researchers and entrepreneurs;
- ▶ Participation in exhibitions, brokerage events;
- ▶ organization of seminars, conferences, meetings, discussions;
- ▶ protection of Intellectual property;
- ▶ cooperation with business incubators;
- ▶ cooperation with industry, Jelgava City Council, Jelgava District Council, Zemgale Planning Region, Zemgale Region Human Resource and Competences Development Centre, EEN Latvia;
- ▶ database maintenance (<http://www.inovacijas.llu.lv/>).

**Latvia University of
Agriculture
“TEHNOLOGY AND
KNOWLEDGE TRANSFER
CENTRE”**

activities

Consults
researchers and
entrepreneurs

Protection of
Intellectual
property

Participation in
• exhibitions,
• brokerage events

Cooperation with
Incubators
• Zemgales;
• Vidzemes;
• Kurzemes.

Organization of
• seminars,
• conferences,
• meetings,
• discussions

Cooperation with:
• Industry
• Jelgava City Council
• Jelgava District Council
• Zemgale Planning Region
• Zemgale Region Human
Resource and Competences
Development Centre
• EEN Latvia

Database maintenance
<http://www.inovacijas.llu.lv/>

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Ltd. "Felici"

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- ▶ The composition of muesli "Graci" is unique because it contains not only usual muesli ingredients, but also triticale, hullless barley, spelt, linseed, black currants, pumpkins and artichokes. The processing of ingredients is unique making the product very valuable – the muesli contains sprouted and chopped whole grain, rolled and micronized whole grain, as well as dried and cut fruit.

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alternative muesli

• IZEJVIELAS • • VEIKALI • *graci* alternative muesli • KOMANDA • • KONTAKTI •

KAS IR GRACI MUSLI?
DABISKS, VESELIGS, DIETISKS

graci
alternative muesli

MUSLI GRACI. TAS IR DABISKS,
ALTERNATĪVS MUSLI, KAS
SADARBĪBĀ AR ZINĀTNIĒKU UN
EKSPERTU KOMANDU TĪPĪ
TĒPATĀ LATVIJĀ

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<http://www.latekofood.lv/>



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Fruit Cubes

«Biograph organic sweets», Ltd



Processed Potato Products

«Paplāte Nr.1», Ltd;

«Nissi», Ltd



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DEVELOPMENT — A NEW APPROACH TO THE
CREATION OF A SUSTAINABLE LEARNING
COMMUNITY — EKOSOC — LV”**

Programme Manager — *Dr.habil.oec.* Baiba Rivža

The programme is established to create knowledge base on sustainable development processes of the state and society, and to elaborate a theoretical justification for sustainable development strategies and action policies through diverse scientific research



EKOSOC-LV Project Managers

The practical aim of the programme is to the elaboration of national economy transformation and development model consistent with the statements of smart specialization.



Conclusions_1

1. The cooperation among institutions of various natures, which is the basic idea of the Helix model, **leads to positive results**, especially if this cooperation is oriented towards fostering innovative actions,
2. For implementing the Quintuple Helix Model approach for rural and regional development in Latvia, there are possibilities to receive **financial support and non-financial support**. These kinds of support gave an impulse to increasing economic activities in many rural municipalities of Latvia,
3. The results indicate that, in general, **universities increasingly become the source of regional economic development** and academic institutions are re-oriented or founded for this purpose.

Conclusions_2

4. At the some time the research concerning entrepreneurship education in Latvia concerns the prevailing traditional approach towards this type of education. Most of the students have not had the opportunity to take part in the new training modules of entrepreneurial education,
 5. The results of the survey show that cooperation between the majority of the local governments and regional HEI and entrepreneurs is implemented
 - on a very good -31.6% or medium level -27.6%.
 - have no cooperation with regional higher education institutions 40.8%
 6. Rural Community representatives respondents were evaluated
 - on a very good -26.8% or medium level -36.6%,
 - at a low and very low level - 31.7%.
- Thus in practice, this helix cooperation is still not fully working in Latvia for implementing the Quintuple Helix Model approach for smart rural development and for the creation of a knowledge economy.

Conclusions_3

- ▶ 7. Local governments' opinion about the performance of and future cooperation with HEI, they regard
 - closer cooperation in designing study programmes to contribute to preparing professionals necessary to the local region
 - as well as cooperation in the fields of scientific and practical research (including research by students and doctoral students) and of designing new products as the most essential.

Acknowledgments

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Thank You !

